

principles is necessarily restricted, the theories considered are such as are derivable directly from objective data. There is little or no consideration of theories, no matter how significant, which depend on more philosophical generalization. Thus, emergent evolution finds no mention. The terminology is sometimes different from that commonly used in American texts; for example, the word, orthogenesis, is not used, although the principle is considered under the more or less synonymous terms, "trends" and "programme evolution."

The text is strongly recommended for library reference and for individual libraries, and also for courses in genetics and evolution when these are given at the upper undergraduate or at graduate levels.

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### Keys to the Phyla of Organisms\*

GEORGE T. HASTINGS

This ambitious little publication arranges in order all of the phyla of plants and animals and those that are neither. Based chiefly on the systems of Bessey and Schaffner for plants, there are included the views of other outstanding authorities in regard to certain groups. The keys are as simple and definite as can be where a sentence or two must be made to characterize an order or phylum. Written for college students of plant morphology they can be easily followed by anyone with a general knowledge of biology and should be interesting and of value to everyone interested in the classification of plants and animals.

In the system of classification two kingdoms below plants (PHYTA) and animal (ZOOEA) are recognized. MONERA with two Phyla, the ARCHAEOPHYTA, a hypothetical group to include the first living particles of primitive life and including viruses and bacteriophages if these are living, and the SCHIZOPHYTA, including bluegreen algae and bacteria. The second kingdom, PROTISTA, includes the slime molds, algae, fungi, protozoa and sponges. The plant kingdom, PHYTA, is divided into nine phyla and the animal kingdom, ZOOEA, into twenty-one.

\* Keys to the Phyla of Organisms. Fred A. Barkley. 40 pages, paper covers. Associated Student's Store, Missoula, Montana. 1939. \$0.75.

Following the keys to the phyla, other keys are given to the orders of plants, including for convenience the phyla of the two kingdoms below the PHYTA. The arrangement of the orders follows closely the classification of Bessey, with the flowering plants, ANTHOPHYTA, divided into Dicotyledoneae and Monocotyledoneae, the first of these classes beginning with the order Ranales and ending with the Compositales—the Salicales, Fagales, Juglandales and other orders with simplified flowers coming well towards the end of the series, the second class begins with the Butomales and Alismatales and ends with Cyperales and Graminales.

A glossary to the terms used is given, an outline of the classification and a list of references to works on classification of plants and animals, chiefly, if we except the work of Bessey, works published in the last ten or twelve years.

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## FIELD TRIPS OF THE CLUB

### TRIPS OF AUGUST 26 AND 27 TO THE WATCHUNG MOUNTAINS

Eleven members and guests were present on the trip of August 26 to Seeley's Notch, near Scotch Plains, N. J., and nine on the trip the following day to Wetumpka Notch and Washington Valley, near Plainfield, N. J. Four hundred and eighty-nine species and varieties of wild plants were identified, including 18 new records for the area, bringing the total for this small area now to 1,492, of which 82 percent are native and 18 percent naturalized. Species found for the first time in our area on these trips included the floating pondweed (*Potamogeton natans*) on Seeley's Pond, the slender knotweed (*Polygonum tenue*) on the exposed trap-rock cliffs, the starry campion (*Silene stellata*), the short-stalked false-pimpernel (*Lindernia dubia* var. *major*), the fragrant bedstraw (*Galium triflorum*), the low cudweed (*Gnaphalium uliginosum*), a recently introduced and rapidly spreading European sow-thistle (*Sonchus uliginosus*), two bush-clovers (*Lespedeza hirta* and *L. violacea*), and several fungi, *Coriolus nigromarginatus*, *Hapalopilus gilvus*, *Laetiporus speciosus*, *Irpex lacteus*, and *Hypholoma sublateritium*. The false-indigo (*Amorpha fruticosa*) reported by Mackenzie in 1921 and not reported since, was rediscovered,